

CLAIMS

What is claimed is:

1. An inductively coupled direct contact test probe, comprising:
 - a handgrip comprising an electrically conductive shield;
 - a measurement tip at a distal end of the handgrip, wherein the measurement tip is electrically isolated from the handgrip shield;
 - a sense line coupled to the measurement tip, wherein the sense line is inside of the handgrip and electrically isolated from the handgrip shield;
 - a toroid located at a proximal end of the handgrip, wherein a portion of the sense line forms a primary winding in electromagnetic communication with the toroid;
 - a first termination impedance, the first termination impedance being coupled in series with the sense line proximate to the toroid;
 - a plurality of turns of wire, wherein the plurality of turns of wire form a secondary winding in electromagnetic communication with the toroid;
 - a second termination impedance, the second termination impedance being coupled in series with the plurality of turns of wire;
 - a coaxial cable having a center conductor and an outer shield conductor encircling and shielding the center conductor, wherein the center conductor is coupled to the plurality of turns of wire; and
 - a shielded enclosure, wherein the shielded enclosure encloses the toroid, the portion of the sense line, the plurality of turns of wire, the first termination impedance and second termination impedance, whereby the shield of the handgrip, the shielded

21 enclosure and the outer shield conductor of the coaxial cable are connected together to
22 form a substantially continuous electrical shield.

1 2. The inductively coupled direct contact test probe according to claim 1, wherein
2 the measurement tip is adapted for connection to a circuit under test.

1 3. The inductively coupled direct contact test probe according to claim 1, wherein an
2 external surface of the electrically conductive shield is electrically insulated.

1 4. The inductively coupled direct contact test probe according to claim 1, wherein
2 the first termination impedance is a resistance having a value of about one megohm.

1 5. The inductively coupled direct contact test probe according to claim 1, wherein
2 the second termination impedance is a resistance having a value of about fifty ohms.

1 6. The inductively coupled direct contact test probe according to claim 1, wherein
2 the plurality of turns of wire are about ten turns of wire.

1 7. The inductively coupled direct contact test probe according to claim 1, further
2 comprising a coaxial connector on an end of the coaxial cable, wherein the coaxial connector is
3 adapted for connection to an input connector of measurement equipment.

1 8. The inductively coupled direct contact test probe according to claim 1, wherein
2 the coaxial connector is selected from the group consisting of RCA, UHF, F, BNC, TNC, DIN,
3 GR874, C, N, SMA, SMC and APC-7.

1 9. The inductively coupled direct contact test probe according to claim 7, wherein
2 the measurement equipment is a spectrum analyzer.

1 10. The inductively coupled direct contact test probe according to claim 7, wherein
2 the measurement equipment is an oscilloscope.

1 11. The inductively coupled direct contact test probe according to claim 1, wherein
2 radio frequency signals are measured.

1 12. The inductively coupled direct contact test probe according to claim 1, wherein
2 said test probe couples radio frequency signals into measurement equipment.

1 13. The inductively coupled direct contact test probe according to claim 1, wherein
2 said test probe couples electromagnetic interference signals into measurement equipment.

1 14. The inductively coupled direct contact test probe according to claim 1, wherein
2 the substantially continuous electrical shield is grounded.

1 15. The inductively coupled direct contact test probe according to claim 1, wherein an
2 end of the coaxial cable couples the substantially continuous electrical shield to ground.

1 16. The inductively coupled direct contact test probe according to claim 1, wherein an
2 unshielded portion of the measurement tip length is less than a wavelength of any signal
3 measured.

1 17. The inductively coupled direct contact test probe according to claim 1, wherein
2 the first termination impedance is of a larger impedance value than the second termination
3 impedance.

1 18. The inductively coupled direct contact test probe according to claim 1, wherein
2 the first termination impedance is substantially one megohm resistive.

1 19. The inductively coupled direct contact test probe according to claim 1, wherein
2 the second termination impedance is substantially fifty ohms resistive.

1 20. The inductively coupled direct contact test probe according to claim 1, wherein
2 the handgrip and the shielded enclosure are integral.

1 21. The inductively coupled direct contact test probe according to claim 1, wherein
2 the handgrip and the shielded enclosure are separate.

1 22. A system for measuring radio frequency and electromagnetic interference signals
2 in an information handling system, said system comprising:

3 radio frequency measurement equipment; and

4 an inductively coupled direct contact test probe coupled to the radio frequency
5 measurement equipment, said inductively coupled direct contact probe comprising:

6 a handgrip comprising an electrically conductive shield;

7 a measurement tip at a distal end of the handgrip, wherein the
8 measurement tip is electrically isolated from the handgrip shield;

9 a sense line coupled to the measurement tip, wherein the sense line is
10 inside of the handgrip and electrically isolated from the handgrip shield;

11 a toroid located at a proximal end of the handgrip, wherein a portion of the
12 sense line forms a primary winding in electromagnetic communication with the
13 toroid;

14 a first termination impedance, the first termination impedance being
15 coupled in series with the sense line proximate to the toroid;

16 a plurality of turns of wire, wherein the plurality of turns of wire form a
17 secondary winding in electromagnetic communication with the toroid;

18 a second termination impedance, the second termination impedance being
19 coupled in series with the plurality of turns of wire;

20 a coaxial cable having a center conductor and an outer shield conductor
21 encircling and shielding the center conductor, wherein the center conductor is
22 coupled to the plurality of turns of wire; and

23 a shielded enclosure, wherein the shielded enclosure encloses the toroid,
24 the portion of the sense line, the plurality of turns of wire, the first termination
25 impedance and second termination impedance, whereby the shield of the
26 handgrip, the shielded enclosure and the outer shield conductor of the coaxial
27 cable are connected together to form a substantially continuous electrical shield;

28 wherein the measurement tip is adapted for making a connect to a selected test
29 point of a circuit in an information handling system and to inductively couple radio
30 frequency signals from the test point to the radio frequency measurement equipment.

1 23. The system according to claim 22, wherein the radio frequency measurement
2 equipment is a spectrum analyzer.

1 24. The system according to claim 22, wherein the radio frequency measurement
2 equipment is an oscilloscope.

1 25. The system according to claim 22, further comprising a plurality of inductively
2 coupled direct contact test probes coupled to the radio frequency measurement equipment.

- 1 26. The system according to claim 25, wherein the plurality of inductively coupled
- 2 direct contact test probes are used in making comparison measurements of selected test points of
- 3 at least one circuit in the information handling system.